Equipment Board

JOB NO. *78-05462A*

BOX NO. *1*

HOLDER NO. *2*

TOTAL DOCS HEREIN *6*

OC RECORDS CONTROL SCHEDULE #3377

ITEM # *4*

DATES *13 Jan. 65* TO *8 Dec. 65*

225037

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AGENDA

EQUIPMENT BOARD

Meeting No. 7-65

DATE   : 3 December 1965

TIME   : 1400

PLACE   : OC Conference Room
          2D02 Hqs. Building

OLD BUSINESS

    None

NEW BUSINESS

    Agenda Item No. 1: Discussion - Switching Concept Washington Area

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1-1965-653
0 2 DEC 1965

1 December 1965

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MEMORANDUM FOR: Equipment Board Members

FROM   : Chief, Telecommunications Staff, OC
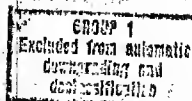
SUBJECT   : Background Information for the 8 December 1965 Equipment
                  Board Meeting

1. PURPOSE: The purpose of this paper is to review OC's plans
for automatic message processing in the Washington area and decide on
a firm course of action re the specific location of the next CIA store
and forward switch.

2. BACKGROUND INFORMATION - It was agreed at Equipment Board Meeting
No. 3-65 that the MAX-I installation �manually was performing as well or
better than had originally been expected. At this meeting, it was also
agreed that the "Headquarters' area should be the location of the next
switch, not only because it probably is the area of maximum need, but
because it is a location in which the switch can be used for software
checkout." The Equipment Board recommended that, "we proceed with planning
to procure an automated switch for the Washington area. Among other
things, this will involve a study to determine whether the first area
switch should be located ██████████████ or at the Langley Signal
Center. Planning should also anticipate the possibility that sufficient
funds can be made available in FY66 and FY67 to obtain both switches in
this time frame." The D/CO's comment on this recommendation was as
follows: "I think that a study called for by recommendation a should be
expedited and that if it appears feasible to procure the equipment earlier
than FY 67, we make an effort to obtain funds from the reserve. I am
convinced that automatic switching equipment in the Washington Area is
required just as soon as it is possible to obtain it."

3. As a result of the above, a study to determine whether the
first area switch should be located at ████████ or at the Langley Signal
Center was made and a Message Switching Paper (T-M65-490, dated 25 August
1965) addressed to Chiefs, OC-S/C, OC-P, OC-S, OC-E, and OC-O for comments,
suggestions and/or criticism showed the results of this study. The decision
was that "The station ███████████████ will become the next switch
location. The ██████ switch will be designed as the system development
switch and will be used to build the remaining switches. After these
switches are installed and in operation over the next several years, the
████████ switch will then be used to switch traffic for that location and
will also serve as a backup switch for the Langley Center."

4. ████████ was chosen for economy, control, flexibility, training,
and security benefits:

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GROUP 1
Excluded from automatic
downgrading and
declassification

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a. Economy: We save the initial expense of setting up a complete system in a secure area at the contractor's plant for system checkout and debugging (using MAX-I as a guide, this would be approximately $70,000). As soon as MAX-I left the contractor's plant, it became impossible to make major program changes because the contractor did not have a simulated MAX-I system equipment configuration for adequate checkout and debugging purposes. The contractor's estimate for such an equipment configuration was $170,000. This $170,000 did not include $75.00 per hour processor time. With a development switch ███████ we would not be faced with this expense. With adequate programming capability within OC (through proper training), we could save the cost of writing, checking, and debugging programs for future overseas switching systems.

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b. Control: We will not need a contractor programmer stationed at each of our future switches (as in the case of MAX-I). There is a slight monetary benefit here because OC programmers would not be paid $35,000 annually.

c. Flexibility: New program assemblies required as a result of procedural changes or system improvements could be made at the development switch obviating the necessity of negotiating a contract with the contractor and checking to insure that the money budgeted for is still available.

d. Training: The development switch would be available for operator, maintenance, and programmer training.

e. Security: Security benefits are increased from all aspects: physical, communications, TEMPEST, etc.

5. In addition to serving as a backup for the Langley Signal Center switch, an emergency applications program could be made readily available for loading into the development switch in the event of an emergency relocation situation.

6. RECOMMENDATION: It is recommended that we proceed with our plans to install the next switch ███████ as soon as money is available.

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7. OC-T aided by OC-E and OC-S/C will be prepared to discuss other options to this recommendation.

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Distribution:
1 - OC-O
1 - OC-E
1 - OC-S
1 - OC-P
1 - OC-OS
1 - OC-S/C
1 - OC-EXO
1 - DD/CO

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EQUIPMENT BOARD
MINUTES

Meeting Number 7-65 of the Equipment Board was held on
8 December 1965 in the OC Conference Room, 2D03, Headquarters
Building. Those present were:

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	Acting D/CO
	OC-O
	OC-E
	OC-OS
	OC-T
	OC-S
	OC-SP
	OC-P
	OC-AD
	OC-XO
	OC-E
	OC-E
	OC-S/C
	OC-E
	OC-T
	OC-T
	OC-P
	OC-OS

I.   OLD BUSINESS

None

II.   NEW BUSINESS

Agenda Item No. 1:   Discussion - Switching Concept - Washington
Area.

1.   Introduction

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a.   This meeting was called to review and discuss
Washington Area - Headquarters ███████████ Switching concepts
and to determine if the area could be best serviced by individual
switches at the above locations or if requirements could be satis-
fied by one central switch at Headquarters. Prior to entering
into discussion, it was agreed that the switch(s) - central or
individual - would not include data processing, capability, or
circuit switching features.

b.   The switches would perform necessary functions for
the routing and relay of conventional "routing indicator" message
traffic. "The processing of data transmission, if required,
would have to be accommodated by circuitry outside of the proposed
message switches."

2. Discussion

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a. ███████████ opened the session by reviewing concepts under study to date pointing out considerations and problems associated with the various approaches. Charts, as follows, which outlined various proposals and problem areas, were displayed.

1. <u>Switching Concept</u>

   Switching Concept Messages
   Problem Areas
   Switching Concepts General
   Message Switch Concepts

2. <u>Message Switching Plans</u>

   Small Dispersed Approach
   Back-up tied to Base Station
   Identical Software (all switches)
   NCS Procedure

3. <u>Washington Area Requirement</u>

   Langley Relay
   Langley Distribution
   ████████ Relay
   ████████ Emergency
   25X1A Langley-████ Back-up
   25X1A Cable Sec Edit and Retrieve
   Training
   Software Changes

b. In the course of this review, a number of pertinent factors surfaced which have a bearing on OC's overall switching program. Prominent among these factors are the need to have our switches compatible with current and future military and civilian agency systems, and the requirement that all of our switches be compatible. Several approaches were discussed as regards achievement of desired compatibility: (1) the upgrading of the MAX-1 and systems to be obtained in the relatively near future to be compatible with systems that may be developed some five years hence, (2) the pooling of funds programmed over coming fiscal years for the acquisition of identical systems now instead of scheduling funding and procurement over a period of years, (3) the feasibility of leasing systems.

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c. During this exchange, it was noted ███████████ that it would be very difficult and expensive to update present and foreseeable future systems to be compatible with those that may be available in the distant future. The cost to update MAX-1 to MAX-2 is estimated to be in the vicinity ███████████ 25X1A

d.   The acquisition of a number of identical message switches at the present time instead of spreading procurement over a period of years may prove economical and would provide message switch compatibility within OC's network. A plan of this type, however, would not provide for compatible inter-connect with future and perhaps more advanced military and civilian agency message switches. It was generally agreed that OC would not be able to isolate its network from military and civilian agency message switching arrangements. Traffic demands in certain areas dictate that OC have a rapid and compatible traffic exchange with other networks. This need may become more evident in the future.

e.   Leasing of systems, albeit, an expensive proposition, may have merit from the viewpoint that it would be the supplier's responsibility to provide up-to-date systems. Additionally, the problems of sole source procurement and the disadvantage of obtaining systems from several different companies was discussed.

25X1A ████████ f.   At this point, attention focused on the Washington- requirement. ████████████ presented specific details a 25X1A prepared by OC-T. The following circuit diagrams pertinent to the presentation were displayed. (Board members were furnished with copies.)

1.   Circuitry Configuration with existing manual store and forward relay (Washington Area)

2.   Present Langley Terminal Circuitry Requirements

3.   Circuitry Configuration with a Single Automatic Store and Forward Relay Only Switch

4.   Circuitry Configuration with Two Automatic Store and Forward Relay Only Switches

5.   Circuitry Configuration with a Single Combined Automatic Store and Forward Relay Switch and Terminal Processor

6.   Circuits at Overseas Locations where Automatic Relay Switches are/or may be installed

25X1A   7.   ████████ Circuits with Existing Manual Store and Forward Relay

8.   Langley Circuits with Existing Manual Store and Forward Relay

9.   Langley Circuitry with a Single Automatic Store Forward Relay Only Switch

25X1A   10.   ████████ Circuitry with A Single Automatic Store and Forward Relay Only Switch Located at Langley

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g. Discussions followed on the need, advantages and disadvantages of having one combined switch (Hqs.) to service Headquarters ██████████ or individual switches at each location. Individual switches appear to be the most practical because of the ability of one to back the other up in the case of emergency. Although it might be expected that a disaster condition in the general Washington area would render both switches inoperative, the possibility of a localized emergency affecting only one switch should not be over looked. To meet situations of this

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type, ██████████ system would have to be identical with other switches and also would have to be programmed to accept the Washington load. This in itself would be a significant chore in

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that it would necessitate the writing of a program for ██████████ and the continuing need to keep such a program up-to-date.

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Providing all OC message switches are the same type, the ██████████ switch would be of value as a test vehicle, for the training of personnel, and for program writing for other switches.

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h. Next ██████████ OC-E, showed and explained a chart which compared the capabilities of MAX-1 and MAX-2. It was noted that MAX-2 will be able to handle an average message input of 10,000 per hour and that MAX-1, in its present form, will not be able to meet this requirement. MAX-2's increased input capability will be a function of the system's ability to process and accommodate external high speed circuitry. MAX-1 (present form) could include a number of desirable features such as high speed input, scope displays, etc., as long as only internal or room type circuits are involved. Possibly, MAX-1 could accept a very limited amount of external high speed input but this mode will essentially be limited to the afore described internal circuitry. A major consideration as regards MAX-1 high speed external input is that such input would have a serious affect on its traffic management functions. Comment followed on high speed circuits

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and OC's need for this type traffic channel. ██████████ OC-E, noted that speed specifications for MAX-2 have not as yet been defined by OC-T. Such definition to include clock rates and the type of equipments to be employed on the distant end of circuits.

3. Conclusions - Washington Area Concept

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a. At this point, (although it was recognized by all members, that the problems of compatibility of present and future switches - ██████ included - have not been solved), it was agreed that the most logical approach to satisfy Washington requirements is to have separate switches at Headquarters ██████████ Additionally, it was agreed that terminal functions should be separated from the relay process.

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4. Board Recommendations

a. That the Washington Area be serviced by two separate switches - one at Headquarters Signal Center and the other at ████████ These switches to be for traffic relay with separate terminal capability. The switches to have the capability of backing one another up - in a minimum of activation time - during emergencies.

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b. That another meeting be held to determine the best course of action to follow for the procurement of message switches for the Washington Area (Hqs. ████████, as well as for other locations.

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Secretary

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Approval and Concurance

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